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1940

ROCKY MOUNTAIN FOREST & RANGE EXPERIMENT STATION
ARIZONA STATE COLLEGE
TEMPE, ARIZONA

UNITED STATES DEPARTMENT OF AGRICULTURE

FOREST SERVICE

FOREST SERVICE
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STATISTICS

SOUTHWESTERN REGION

ARIZONA AND NEW MEXICO

MARCH 1, 1940

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Rocky Mountain Forest and Range Experiment Station
Forest Hydrology Laboratory
Tempe, Arizona

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ORIGIN OF SOUTHWESTERN NATIONAL FORESTS

Dates of Proclamations and Executive Order	ARIZONA	NAME OF NATIONAL FOREST
	Apache	
August 17, 1898		Black Mesa National Forest
July 1, 1908		Part of the Black Forest Reserve became the Apache National Forest
(The above covers only the portion of the Apache National Forest in Arizona)		
	Coconino	
August 17, 1398		San Francisco Mountains Forest Reserve
July 2, 1908		All of the San Francisco Mountains Forest Reserve and parts of the Black Mesa, Tonto and Grand Canyon were consolidated under the name of the Coconino National Forest.
	Coronado	
November 5, 1906		Baboquivari Forest Reserve
November 6, 1906		Huachuca Forest Reserve
November 7, 1906		Tumacacori Forest Reserve
July 2, 1908		Baboquivari, Huachuca and Tumacacori Forest Reserves consolidated under the name of the Garces National Forest
April 11, 1902		Santa Rita Forest Reserve
July 2, 1902		Santa Catalina Forest Reserve
May 25, 1907		Dragoon National Forest
July 2, 1908		Santa Rita, Santa Catalina and Dragoon National Forests consolidated under the name of the Coronado National Forest
April 17, 1911		Garces and Coronado National Forests consolidated under the name of the Coronado National Forest
July 30, 1902		Chiricahua Forest Reserve
November 5, 1906		Peloncillo Forest Reserve

Dates of Proclamations and Executive Order	Name of National Forest
	Coronado (Continued)
July 2, 1908	Chiricahua and Peloncillo Forest Reserves consolidated under the name of the Chiricahua National Forest. (Portion of the Peloncillo in New Mexico.)
June 6, 1917	Chiricahua and Coronado National Forests consolidated under the name of the Coronado National Forest.
(The above covers the entire Forest situated in Arizona and New Mexico)	
	Crook
July 22, 1902	Mt. Graham Forest Reserve
March 20, 1905	Pinal Mountains Forest Reserve
October 3, 1905	Tonto Forest Reserve
January 13, 1908	Pinal Mountains Forest Reserve became part of the Tonto National Forest
July 1, 1908	Parts of the Mt. Graham and Tonto National Forests, including the Pinal Mountains area, consolidated under the name of the Crook National Forest.
	Kaibab
February 20, 1893	Grand Canyon Forest Reserve
July 2, 1908	All of the San Francisco Mountains and parts of the Black Mesa, Tonto, and Grand Canyon National Forests consolidated under the name of the Coconino National Forest.
June 28, 1910	Part of the Coconino National Forest together with certain other land not heretofore reserved became the Tusayan National Forest.
May 22, 1908	Dixie National Forest (Arizona)
July 2, 1908	Kaibab National Forest
March 18, 1924	Dixie consolidated with the Kaibab
August 4, 1934	The Tusayan and Kaibab National Forests consolidated

Dates of Proclamations and Executive Order	Name of National Forest
Prescott	
May 10, 1898	Prescott Forest Reserve
December 30, 1907	Verde National Forest
July 2, 1908	Prescott and Verde National Forests consolidated under the name of the Prescott National Forest
Sitgreaves	
July 1, 1908	Parts of the Black Mesa and Tonto National Forests consolidated under the name of the Sitgreaves National Forest
Tonto	
October 3, 1905	Tonto Forest Reserve
NEW MEXICO	
Apache	
January 23, 1925	A portion of the Datil National Forest was transferred to the Apache National Forest. This portion was originally part of the Magdalena and Gila River Forest Reserves
Carson	
November 7, 1906	Taos Forest Reserve
July 1, 1908	Carson National Forest created by consolidation of the Taos National Forest and part of the Jemez National Forest
Cibola	
October 5, 1906	Mt. Taylor Forest Reserve
November 5, 1906	San Mateo Forest Reserve
"	Magdalena Forest Reserve
November 6, 1906	Manzano Forest Reserve
April 16, 1908	Mt. Taylor National Forest consolidated with the Manzano National Forest.

Dates of Proclamations and Executive Order	Name of National Forest
	Cibola (Continued)
June 18, 1908	Creating the Datil National Forest
July 2, 1908	San Mateo National Forest added to the Magdalena National Forest
February 23, 1909	Magdalena and Datil National Forests consolidated.
March 2, 1909	Zuni National Forest
September 10, 1914	Zuni National Forest consolidated with the Manzano National Forest.
December 3, 1931	Name of the Manzano changed to Cibola National Forest and a portion of the Datil transferred to the Cibola.
	Gila
March 2, 1899	Gila River Forest Reserve
February 6, 1907	Big Burros Forest Reserve
June 18, 1908	Consolidating the Big Burros with the Gila National Forest
December 24, 1931	A portion of the Datil was transferred to the Gila National Forest
	Lincoln
July 26, 1902	Lincoln Forest Reserve
November 5, 1906	Gallinas Forest Reserve
April 19, 1907 April 24, 1907	Guadalupe National Forest Sacramento National Forest
July 2, 1908	Guadalupe and Sacramento National Forest consolidated as the Alamo National Forest. The Gallinas and Lincoln National Forest consolidated as the Lincoln National Forest
June 6, 1917 (effective July 1)	The Alamo National Forest transferred to the Lincoln National Forest.

Dates of Proclamations And Executive Order	Name of National Forest
Santa Fe	
January 11, 1892	Pecos River Forest Reserve
October 12, 1905	Jemez Forest Reserve
July 1, 1908	Pecos River National Forest changed to Pecos National Forest.
July 1, 1915	Jemez and Pecos National Forests consolidated as the Santa Fe National Forest
October 3, 1905	Portales Forest Reserve
March, 1907	The Portales National Forest restored to the public domain

Note: The foregoing covers only changes of name and major transfers. There have been many additions, eliminations and changes in boundaries not listed.

NATIONAL FOREST IMPROVEMENTS (GOVERNMENT OWNED) ON JULY 1, 1939
(ARIZONA)

Fire Control and Administration	Number	Miles	Construction Cost
Telephone Lines		2,081	$ 365,162
Radio Systems			291
Fire Breaks		8	10,522
Lookout Houses, Towers & Observs.	113		97,618
Other Fire Control Investments			65,030
Dwellings	135		264,974
Barns and Garages	111		162,341
Offices	48		79,146
Water	127		106,801
Improvements, R. & T.	81		32,796
Other General Investments			301,823
Total	615		1,486,504
Public Service			
Winter Sports Areas	3		1,244
Campground and Picnic Areas	155		715,564
Recreation Lakes & Swimming Pools	3		80,550
Other Recreation Developments			11,452
Total	161		808,810
Range			
Fences and Corrals		5,597	1,675,462
Stock Driveways and Bridges		108	7,717
Range Water Developments	1,527		757,778
Other Range Mgt. Investments			104,738
Total	1,527		2,545,695
ROADS		4,016	17,997,598
TRAILS		3,006	471,619
Total			18,469,217
GRAND TOTAL	2,303		23,310,226

ARIZONA	RANGER DISTRICTS IN REGION 3	NEW MEXICO	
Apache National Forest	2	Apache National Forest	3
Coconino " "	6	Carson " "	6
Coronado " "	5	Cibola " "	7
Crook " "	6	Coronado " "	1
Kaibab " "	5	Gila " "	7
Prescott " "	6	Lincoln " "	6
Sitgreaves " "	4	Santa Fe " "	7
Tonto " "	8		
	42		37

TOTAL FOR REGION - 79

NATIONAL FOREST IMPROVEMENTS (GOVERNMENT OWNED) ON JULY 1, 1939

NEW MEXICO			(Cont'd)			TOTAL		
Number	Miles	Construction Cost	Number	Miles	Construction Cost			
	2,417	$ 483,213		4,498	$ 848,375			
					291			
	4	508		12	11,030			
77		67,578	190		165,196			
		42,586			107,616			
149		183,359	284		448,333			
90		93,321	201		255,662			
36		73,471	84		152,617			
95		85,451	222		192,252			
35		15,265	116		48,061			
		272,558			574,381			
482		1,317,510	1,097		2,803,814			
5		17,759	8		19,003			
133		453,439	288		1,169,003			
			3		80,550			
		9,875			21,327			
138		481,073	299		1,289,883			
	4,123	1,415,720		9,720	3,091,182			
	23	498		131	8,215			
465		241,563	1,992		999,341			
		46,489			151,227			
465		1,704,270	1,992		4,249,965			
	2,613	12,439,141		6,629	30,436,739			
	1,927	241,071		4,933	712,690			
		12,680,212			31,149,429			
1,085		16,182,865	3,388		39,493,091			

NUMBER AND CAUSES OF FOREST FIRES ON LANDS PROTECTED BY THE U. S. FOREST SERVICE

1939

Forest and State	A Less Than ¼ A.	B ¼ to 10 A.	C 10 and Over	Total	Light-ning	Ry.	Camp-ers	Smok-ers	De-bris burn-ing	In-cen-di-ary	Lum-ber-ing	Mis-cel-lan-eous	Total M.C. Fires
ARIZONA													
Apache	96	17	1	114	102	0	4	8	0	0	0	0	12
Coconino	535	59	3	597	531	1	15	45	1	0	1	3	66
Coronado	63	14	11	88	73	0	2	11	0	0	0	2	15
Crook	43	8	3	54	41	0	2	5	2	0	1	3	13
Kaibab	139	35	4	178	124	13	17	21	2	0	0	1	54
Prescott	65	14	3	82	58	0	1	17	1	1	0	4	24
Sitgreaves	152	49	4	205	191	0	3	9	0	0	0	2	14
Tonto	89	23	2	114	103	0	2	9	0	0	0	0	11
Total ARIZONA	1182	219	31	1432	1223	14	46	125	6	1	2	15	209
NEW MEXICO													
Apache	66	10	2	78	67	0	2	5	0	0	1	3	11
Carson	43	16	1	60	22	0	8	28	0	2	0	0	38
Cibola	45	16	2	63	41	0	5	14	1	0	1	1	22
Coronado	1	0	0	1	0	0	0	1	0	0	0	0	1
Gila	156	53	6	215	201	0	4	10	0	0	0	0	14
Lincoln	49	26	6	81	47	0	5	15	1	3	4	6	34
Santa Fe	44	31	6	81	59	0	5	16	0	0	0	1	22
Total NEW MEXICO	404	152	23	579	437	0	29	89	2	5	6	11	142
Total REGION	1586	371	54	2011	1660	14	75	214	8	6	8	26	351

Class of fires abstracted from Sheet 7a Form 924 CY 1939
Cause of fires abstracted from Sheet 8a Form 924W CY 1939

MAJOR ACCOMPLISHMENTS WITH EMERGENCY ORGANIZATIONS

(Not Including CCC)

April 1, 1933 to December 31, 1939

Activity	Unit	ARIZONA Const.	ARIZONA Maint.	NEW MEXICO Const.	NEW MEXICO Maint.	R. 3 - TOTAL Const.	R. 3 - TOTAL Maint.
Truck trails and minor roads	Miles	529	1692	497	3524	1026	5216
Bridges	No.	31	3	34	42	65	45
Horse trails	Miles	429	336	199	3065	628	3401
Telephone Lines	Miles	162	699	395	2640	557	3339
Fish stream imp.	Miles	132	-	202	20	334	20
Range and other fences	Miles	1389	349	1463	2110	2852	2459
Water development	No.	498	38	174	77	672	115
Pipe lines	Miles	36	8	5	1	41	9
Corrals	No.	10	1	19	5	29	6
Range Surveys	Acres	1496835	-	896999	-	2395834	-
Range revegetation	Acres	1593	-	519	-	2112	-
Eradication poisonous plants	Acres	480	-	931	-	1411	-
Estimating timber Resources	Acres	500206	-	38500	-	538706	-
Stock Driveways	Miles	-	23	5	83	5	106
Rodent control	Acres	20923	19680	239190	7432	260113	27112
Timber stand imp.	Acres	19467	-	9419	-	28886	-
Tree disease control	Acres	12760	7115	6753	836	19513	7951
Tree Insect control	Acres	13224	-	2915	-	16139	-
Dams, erosion control	No.	103	5	45	8	148	13
Recreation campgrounds	Acres	146	2616	99	274	245	2890
Recreation structures	No.	283	78	553	677	836	755
Fire breaks	Miles	28	12	4	-	32	12
Admin. Bldgs.	No.	81	34	89	153	170	187

MAJOR ACCOMPLISHMENTS WITH EMERGENCY ORGANIZATIONS
(Cont'd)

Activity	Unit	ARIZONA		NEW MEXICO		R. 3-TOTAL	
		Const.	Maint.	Const.	Maint.	Const.	Maint.
Lookout Houses & Towers	No.	10	4	18	5	28	9
Fire suppression	M-Days	751	-	1016	-	1767	-
Cattle guards	No.	74	14	66	27	140	41
Signs, markers and monuments	No.	228	12	922	25	1150	37
Erosion control	Acres	7393	60	7952	-	15345	60
Fire prevention and presuppression	M-Days	347	-	606	7	953	7
Maps and models	M-Days	-	-	13440	-	13440	-
Marking boundaries	Miles	56	40	1016	94	1072	134
Surveys, topographic	Acres	9780	-	86710	-	96490	-

ACCOMPLISHMENTS WITH CCC ORGANIZATIONS

4/1/33 - 12/31/39

Activity	Unit	ARIZONA Const.	ARIZONA Maint.	NEW MEXICO Const.	NEW MEXICO Maint.	R-3 TOTAL Const.	R-3 TOTAL Maint.
Truck trails and minor roads	Mi.	1,611	5,959	1,660	10,528	3,271	16,487
Bridges, vehicle	No.	185	60	205	37	390	97
Horse trails	Mi.	436	326	176	443	612	770
Telephone lines	Mi.	1,041	2,354	2,110	3,437	3,150	5,791
Ponds, fish and birds	No.	331	195	60	6	391	201
Fish stream improvement	Mi.	175	12	220	58	395	70
Range and other fences	Mi.	2,281	577	2,066	757	4,347	1,534
Water development	No.	798	76	386	152	1,184	228
Pipe Lines	Mi.	7,692	2,597	7,899	7	15,591	2,604
Corrals	No.	42	-	39	1	81	1
Range revegetation	A.	3,740	-	8,007	-	11,747	-
Eradication poisonous plants	A.	5,138	-	15,955	-	21,093	-
Estimating timber resources	A.	7,100	-	57	-	7,157	-
Stock driveways posting and improvement	Mi.	32	-	4	-	36	-
Rodent control	A.	1,138,533	-	400,255	-	1,538,788	-
Timber stand Improvement	A.	43,328	-	33,822	-	77,150	-
Tree disease control	A	64,276	37,084	27,126	4,675	91,402	41,759
Tree insect control	A.	7,759	-	10,967	-	18,726	-
Dams, erosion control	No.	63,629	19,428	70,792	2,498	134,421	21,926
Recreation campgrounds	A.	1,020	379	295	609	1,315	988

ACCOMPLISHMENTS WITH CCC ORGANIZATIONS
(Cont'd)

Activity	Unit	ARIZONA Const.	ARIZONA Maint.	NEW MEXICO Const.	NEW MEXICO Maint.	R-3 TOTAL Const.	R-3 TOTAL Maint.
Recreation structures	No.	3,651	772	2,347	587	5,998	1,359
Fire breaks	Mi.	27	25	3	-	30	25
Admin. bldgs. barns and dwellings	No.	121	187	63	97	184	284
Admin. bldgs. small garages and other	No.	201	59	341	125	542	184
Lookout houses and towers	No.	29	10	28	22	57	32
Fire suppression	MD	28,992	-	12,120	-	41,112	-

TOTAL CAMP MONTHS, 4/1/33 - 12/31/39

Arizona	1074
New Mexico	771
Total R-3	1845

TIMBER DATA

Acreage and percent of commercial sawtimber lands

ARIZONA

Ownership of Sawtimber Areas

	Commercial°	Percent
National Forests	2,330,000	64.6
Indian Reservations	1,215,000	33.7
Other Federal		
State	28,000	.8
	3,573,000	99.1
Private	34,000	.9
Total	3,607,000	100.0

NEW MEXICO

National Forests	2,421,000	60.3
Indian Reservations	428,000	10.7
Other Federal	10,000	.2
State	119,000	2.9
	2,978,000	74.1
Private	1,040,000	25.9
Total	4,018,000	100.0

VOLUME OF TIMBER COMMERCIAL FORESTS°

ARIZONA

Ft. B. M.

National Forests	13,842,000,000	71.0
Indian Reservations	5,500,000,000	28.2
Other Federal		
State	82,000,000	.4
	19,424,000,000	99.6
Private	68,000,000	.4
Total	19,492,000,000	100.0

NEW MEXICO

National Forests	9,596,000,000	69.4
Indian Reservations	608,000,000	4.4
Other Federal	25,000,000	.2
State	526,000,000	3.9
	10,755,000,000	77.9
Private	3,068,000,000	22.1
Total	13,823,000,000	100.0

°Data from Joint Congressional Report.

TIMBER MANAGEMENT

Estimate of Sawtimber in M ft. B. M. in Southwest - includes non-commodity and non-commercial°

	Arizona	New Mexico
National Forests	14,489,000	11,253,000
Indian Reservations	5,531,000	566,000
Other Federal Lands	545,000	20,000
State	110,000	521,000
Private	118,000	4,837,000
TOTAL	20,793,000	17,197,000

Cordwoods in Cords

National Forests	10,894,000	13,448,000
Other	19,000,000	20,000,000
TOTAL	29,894,000	33,448,000

Area sawtimber type - Arizona 4,774,000 Acres or 6.8% of total
" " " - New Mexico 6,097,000 Acres or 7.7% of total
Woodland forests cover 27.95% of total area of the two states.

Area sawtimber type in National Forests of Arizona - 3,072,000
" " " " " " New Mexico - 4,010,000

Total area cutover land, sawtimber type, in Arizona, to January 1, 1939
702,000 Acres (Estimated)
Total area cutover land, sawtimber type, in New Mexico, to January 1, 1939
1,164,000 Acres (Estimated)

National Forests of Region 3 are:
35% Woodland
34% Sawtimber
31% Untimbered
About 73% of gross area of New Mexico Forests belong to the Government
About 98% of gross area of Arizona Forests belong to the Government.

TIMBER LAND DATA BY PER CENTS - BASED ON AREA

Arizona		New Mexico	
National Forests	64.9%	National Forests	67.3%
Indian Reservations	30.7	Indian Reservations	5.8
Public Domain	0.4	Public Domain	0.3
National Park	2.3		
Total Federally Owned	98.3%	Total Federally Owned	73.4%
State	0.7	State	2.2
Total Federal & State	99.0%	Total Federal & State	75.6%
Private	1.0	Private	24.4
Grand Total	100.0%	Grand Total	100.0%

Above data includes commercial timber.

°Latest data.

TIMBER CUT FROM THE NATIONAL FORESTS

M ft. B. M. Fiscal Year 1939

Forest	Commercial Sales	Cost Sales	Exchange	Total Cut	Total Value	Amount Free Use (M ft)
Apache	6,031	45	-	6,076	13,047.48	1,781°
Coconino	12,386	130	5,976	18,492	41,183.00	1,139
Coronado	2,382	4	-	2,386	6,390.35	1,052
Crook	344	45	-	389	741.80	229
Kaibab	19,138	26	-	19,164	39,725.20	679
Prescott	1,329	14	-	1,343	2,855.11	1,226
Sitgreaves	10,584	36	414	11,034	28,493.20	847
Tonto	591	46	-	637	2,365.54	1,428
ARIZONA	52,785	346	6,390	59,521	134,801.68	8,381
Apache	1,391	58	-	1,449	3,196.91	(See Note)
Carson	3,442	371	2,192	6,005	12,735.39	7,623
Cibola	2,381	121	50	2,552	5,015.07	4,552
Gila	2,307	36	-	2,343	4,593.32	827
Lincoln	9,099	96	-	9,195	17,884.78	4,015
Santa Fe	7,410	177	8,829	16,616	33,821.05	7,094
NEW MEXICO	26,030	859	11,071	37,960	77,246.52	24,111
REGION 3	78,815	1,205	17,461	97,481	212,048.20	32,492

° Includes free use on Apache for both Arizona and New Mexico.

Cumulative Increment of Ponderosa Pine In Different Periods after Cutting
(Data collected and compiled by Southwestern Forest and Range Exp. Station)

Residual Volume Ft. b.m.	Years After Cutting: 5 Ft. B.M.	10 Ft. B.M.	15 Ft. B.M.	15 Percent	20 Ft. B.M.	25 Ft. B.M.	30 Ft. B.M.
200	50	145	200	7.3	320	420	520
600	100	250	390	4.3	520	670	800
1,000	165	325	495	3.3	680	870	1,030
2,000	260	515	805	2.7	1,090	1,340	1,610
3,000	350	700	1,125	2.5	1,550	1,825	2,230
4,000	460	900	1,410	2.4	1,910	2,430	2,900
5,000	540	1,050	1,640	2.2	2,240	2,800	3,350
6,000	620	1,220	1,850	2.0	2,550	3,250	3,875
7,000	670	1,350	2,070	2.0	2,800	3,550	4,250
8,000	735	1,480	2,250	1.9	3,050	3,950	4,650
9,000	775	1,550	2,400	1.8	3,200	4,050	4,700
10,000	800	1,650	2,500	1.7	3,250	4,000	4,800

(Note: Increment volumes in lower portion of table are subject to considerable error due to too few plots. Volumes beyond 20 years were obtained by extending curve.)

NUMBER OF TREE SPECIES

According to U. S. Department of Agriculture, Misc. Circular No. 92, "Check List of the Forest Trees of the United States" there are 131 species of trees in Region 3.

Of these 131 species four make up 98% of volume of the sawtimber stand. Ponderosa pine (Pinus ponderosa) making up 82% of the volume; Douglas fir (Pseudotsuga taxifolia) making up 10% of the volume; White fir (Abies concolor) making up 3% of the volume; Engelmann spruce (Picea engelmanni) making up 3% of the volume; and Mexican white pine (Pinus strobifermis), Corkbark fir (Abies Arizonica) limber pine (Pinus flexilis), etc., making up the remainder of the volume.

TOTAL CUT SAWTIMBER BY STATES
Data From Census (Calendar Year)
(All Ownerships)

Year	Number Mills Reporting		Total Cut M. F. B. M.		M. F. B. M. Total
	Arizona	New Mexico	Arizona	New Mexico	Arizona and New Mexico
1926	23	67	115,000	127,000	242,000
1927	26	73	169,000	173,000	342,000
1928	25	77	158,000	162,000	320,000
1929	31	78	175,000	148,000	323,000
1930	26	76	95,000	143,000	238,000
1931	26	57	85,000	58,000	143,000
1932	22	52	58,000	72,000	130,000
1933	28	55	90,000	89,000	179,000
1934	34	74	73,000	101,000	174,000
1935	29	79	98,716	126,220	224,936
1936	36	87	123,411	140,840	264,251
1937	39	105	123,041	164,446	287,487
1938	37	94	118,200	125,176	243,376

The sawtimber forests of Arizona and New Mexico have supplied sawtimber for the production of approximately eight billion board feet of sawn products during the period 1879 to 1939 inclusive.

TOTAL CUT FROM NATIONAL FORESTS

All classes of products converted to M ft. All classes of Forest sales.

Year	S-22		Commercial Sales & Exchange				Free Use		
	Arizona	New Mexico	Arizona	New Mexico	Total Arizona & New Mexico	Average Price per M ft.	Arizona	New Mexico	Total
1926	379	579	30,761	16,032	46,793	$ 2.59	7,002	13,980	20,982
1927	334	679	69,896	14,353	84,249	2.65	6,767	10,038	16,805
1928	378	695	93,117	18,854	112,031	2.51	6,590	7,643	14,233
1929	361	595	143,575	33,161	176,736	2.49	7,337	10,614	17,951
1930	269	907	85,476	36,194	121,670	2.33	8,670	15,818	24,488
1931	257	953	80,862	14,865	95,727	2.34	10,342	22,503	32,845
1932	371	827	57,206	10,714	67,920	2.31	12,876	27,962	40,838
1933	284	813	75,998	14,196	90,194	2.38	14,623°	29,255	43,878
1934	508	774	34,944	12,826	47,770	2.35	14,568	23,485	38,053
1935	391	841	78,648	17,398	96,046	2.23	15,395	26,725	42,120
1936	484	936	91,670	34,912	126,582	2.34	13,593	22,253	35,846
1937	572	1,144	91,902	50,631	142,533	2.24	7,902	25,332	33,234
1938	519	1,055	69,334	36,763	106,097	2.19	8,117	25,452	33,569
1939	250	846	65,166	31,934	97,100	2.18	8,381	24,111	32,492

°Previous figures on "Free Use" are calendar year. Subsequent years are fiscal year.

Handled under cooperative agreement (State timber) 10,085 M (C.Y. 1939)
Handled under cooperative agreement (Private timber) 5,197 M (C.Y. 1939)

COMPARATIVE PAINTABILITY OF DIFFERENT SPECIES OF WOODS

Group No.	Description of group	Species
1	Woods on which paints of types A and B disintegrate slowly	Softwoods Cedars Southern cypress Redwood
2	Woods on which paints of type A disintegrate slowly but those of type B disintegrate somewhat more rapidly than they do on woods of group 1	Softwoods Northern white pine Sugar pine Western (Idaho) white pine
3	Woods on which paints of types A and B disintegrate more rapidly than they do on woods of group 1	Hardwoods Aspen Cottonwood Yellow poplar Softwoods White fir Hemlock Lodgepole pine Ponderosa pine Engelmann spruce Sitka spruce
4	Woods on which paints of types A and B disintegrate more rapidly than they do on woods of Group 3	Hardwoods Beech Birch Maple Gums Softwoods Douglas fir Norway pine Southern yellow pine Western larch
5	Woods unsuitable for conventional house painting because wood filler is required to fill the pores properly.	All hardwoods with pores larger than those in birch, such as ash, chestnut, elm, hickory, oak, walnut

NOTE: Paints of type A are those that fail by checking and crumbling such as pure white lead paint; those of type B fail by cracking, curling, and flaking, such as paints containing zinc oxide mixed with other pigments.

COMPARATIVE DECAY RESISTANCE OF HEARTWOOD OF LOCAL AND FREQUENTLY-USED OUTSIDE SPECIES

(Applies only to heartwood, untreated. Sapwood of no species is durable under conditions favoring decay; i.e., in contact with soil, poorly-drained or aerated parts of buildings, bridges, etc.)

Durable Group

Cedars
Junipers
Black Locust
Osage Orange
Redwood
Southern cypress

Nearly as Durable Group

White oaks
Honey locust
Dense Douglas fir
Dense southern pine
Dense larch

High Intermediate Group

Cypress (Cupressus)
Douglas fir (unselected)
Southern pine (Unselected)
Larch (unselected)

Low Intermediate Group

Red Oaks
Pines (other than southern)
Spruces
Maple (hard and red)
Ashes
Hemlocks

Nondurable Group

True firs (concolor, alpine, balsam, etc.)
Aspen
Cottonwood
Willows

NOTE: When used under decay-inducing conditions the woods in the last three groups should be treated with an approved preservative and in so treating sapwood all around is preferable.

SOME WOOD UTILIZATION FACTS

All other things being equal, that is, grade for grade:

1. Sapwood of any species is as strong when used as a beam or post and as stiff as the heartwood of that species.

2. Red (heartwood) hickory tool handles are as strong as white (sapwood) handles.

3. Timber cut from dead trees (free from decay) is as strong as that cut from live trees.

4. The harder the wood the higher its nail-holding power but the more easily it splits. Conversely, the softer the wood the lower its nail-holding power but the less easily it splits. Hence, use slimmer and more nails in hardwoods and larger and less nails in softwoods.

5. Good air-seasoned wood and good kiln-dried wood of the same species at the same moisture content are of equal strength.

6. From the principal property standpoints the oaks are classed commercially in two groups - white and red. Thus the three important southwestern species of oak are of approximately equal value and behavior in use.

   Arizona white oak (Q. arixonica)
   Emory oak (Q. emoryi)
   Rocky mountain white oak (Q. utahensis)

7. Wapwood of no species is durable.

8. In untreated condition, with the same proportion of heartwood present, there is no difference in durability of round and split posts but splitting often changes the relative proportion by volume of sapwood and heartwood.

9. Generally the softer a wood the better it takes and holds paint.

10. In repainting buildings use the paint of the same manufacturer as was originally used since coats of paints of different formula usually are not compatible.

11. Uneven coatings on wood cause warping.

12. Of all the lumber called or sold under a commercial or trade name including the words, "white pine," that cut from only the following species is true white pine:

   Northern white pine (P. strobus)
   Western (Idaho) white pine (P. monticola)
   Sugar pine (P. lambertiana)
   Limber pine (P. flexilis)
   Whitebark pine (P. albicaulis)
   Mexican white pine (P. strobiformis)

All others belong to the hard or southern yellow pine group (i.e., longleaf, shortleaf, loblolly, slash, etc.); or to the intermediate, red, or nut group (i.e., Norway, lodgepole, jack, ponderosa, pinon, etc.).

FUEL VALUE OF WOOD

(Local species and typical others for comparison)

Approximate equivalents of one ton (2,000 pounds) of coal, in terms of one cord of 128 cubic feet containing 80 cubic feet of solid wood.

One cord of	One and one half cords of	Two cords of
Oaks	Soft maple	Cedars
Locusts	Sycamore	Cypress (Cupressus)
Hard maple	Mesquite tops	Cottonwoods
Ashes	Douglas fir	Aspen
Hickory	Southern pines	Other pines
Mesquite roots	Hemlocks	
	Larch	

NOTE: Of all American species of wood, mesquite is one of the few in which the root-wood is of higher specific gravity than above-ground wood. It pays to use root-wood for fuel and the grubbing will improve many of our ranges.

Water Yield From Small Typical Mountain Watershed;
Open Forest Cover--Elevation 5,000 to 6,000
Applicable to Central Arizona
(Data from Parker Creek Branch Station)

Year	Season	Rain Inches	Run-off Cubic Feet	Cubic Feet Per Acre	Total rain before run-off began	Lag in days before run-off began	Percent run-off to rain-fall	Acre-feet per inch of rain
1934	Summer	7.54	220,770	315	5.17	60	1.0	0.7
1934	Winter	19.93	17,959,000	25,700	1.00	1	35.5	21.0
1935	Summer	7.78	25,895	37	3.30	30	0.1	0.08
1935	Winter	16.64	13,683,403	19,600	1.11	15	32.3	19.0

Water measurements recorded by weirs at lower extremity of watershed.

Soil Erosion in Relation To Plant Cover

Vegetation Character	Density	Average annual rainfall	Elevation	Slope	Exposure	Soil	Eroded Material cubic feet per acre	Erosion in inches over the area	Length of Record
	Percent	Inches	Feet	Pct.			Cubic Feet	Inches	Years
Deteriorated Chaparral and half-shrubs Heavily grazed in past-lightly grazed for past 3 yrs.	14 .30% of cover large dense crowned shrubs	17	3,700	35	North	Deep gravelly sandy loam Granitic soil type area	423 per annum. Eroded slopes, deep gullies	.11 per year 1.10 in 10 years	5
Deteriorated Chaparral and grass now revegetated. Protected for 3 years.	50 About 1/3 large shrubs Moun.mahogany: garrya, etc. 2/3 side oats: bull-grass, hairy grama, wht.eriogonum:	23	5,400	60	South	Rocky Clay loam. Quartzite soil - type area	Negligible Old gully through center of area is healing	Negligible	3
Deteriorated Semi-desert shrubs, no perennial herbaceous vegetation.	Density varies annuals only. Winter annuals removed	14		2 to 3	South	Heavy clay soil. Conglomerate clay-gravel soil-type area	Gentle slopes, no gullies, sheet wash at rate of 138 cu.ft.per yr.	.036 per year. About 1 inch in 28 years	1½
	Winter annuals left on ground	14		2 to 3	South		Gentle slopes, no gullies, sheet wash at rate of 81 cu.ft.per yr.	.021 per yr. About 1 in. in 48 yrs.	1½

Livestock Grazed Under Permit On National Forests

C.Y.	Cattle	Horses	Sheep	Goats	Swine	Total	Exempt Stock
ARIZONA							
1926	227,198	2,539	257,575	1,140	271	488,723	21,551
1927	207,517	2,631	337,786	1,796	268	549,998	21,097
1928	186,277	2,231	286,231	1,766	460	476,965	19,495
1929	181,125	1,951	351,221	1,397	455	536,049	18,631
1930	172,024	1,533	352,368	426	272	526,623	11,073
1931	178,900	1,427	331,329	3,345	196	515,197	10,778
1932	181,388	1,391	262,652	1,786	157	447,374	10,460
1933	185,711	1,312	361,013	0	115	448,151	10,824
1934	183,281	1,018	245,189	10	80	434,648	10,629
1935	181,363	912	252,117	0	55	434,447	10,398
1936	180,046	1,074	270,029	600	50	451,799	11,273
1937	182,421	1,014	242,182	600	42	426,259	11,261
1938	183,396	1,042	223,993	600	45	409,076	11,287
1939	171,778	1,198	199,086	800	45	372,907	10,087
NEW MEXICO							
1926	91,364	3,071	197,931	10,390	180	302,936	13,463
1927	89,909	3,350	220,916	11,696	145	326,016	11,190
1928	81,065	3,446	227,651	10,491	168	322,821	12,167
1929	81,044	3,381	244,509	10,427	134	339,495	11,024
1930	82,049	2,964	225,577	10,526	84	321,200	11,044
1931	86,197	2,651	217,044	9,592	102	315,586	10,374
1932	88,669	2,148	211,156	10,850	104	312,927	11,581
1933	91,747	1,704	191,617	10,225	60	295,353	11,488
1934	92,923	1,548	200,156	8,082	19	302,728	11,467
1935	89,174	1,755	179,410	8,639	15	278,993	7,641
1936	86,636	1,894	189,446	6,988	0	284,964	10,425
1937	86,776	1,841	164,709	6,638	0	259,964	10,473
1938	84,136	1,869	167,524	6,417	0	259,946	10,016
1939	89,120	2,028	168,230	4,969	0	264,347	11,766

Estimates of Game On National Forests

Fur-Bearing Animals

	Year	Badger	Beaver	Fox	Mink	Raccoon	Ringtail Cat	Skunk	Weasel
Arizona	1935	4,030	1,020	19,250	60	6,450	5,460	46,880	2,550
	1936	4,075	940	21,450	55	6,535	5,775	44,800	2,360
	1937	4,110	930	20,550	70	6,840	6,110	43,200	2,210
	1938	3,640	960	20,370	50	6,950	6,730	42,500	2,090
	1939	3,000	931	20,400	20	6,200	7,200	41,700	2,200
New Mexico	1935	2,840	1,740	6,880	810	1,510	2,100	27,450	1,640
	1936	2,650	1,720	6,935	495	1,545	2,000	28,365	1,630
	1937	2,710	1,770	6,990		1,700	1,850	29,480	1,680
	1938	2,940	1,810	6,810	410	1,760	2,120	28,430	4,240
	1939	3,090	1,860	6,900	400	1,700	2,250	27,000	4,200
Total Region 3	1935	6,870	2,760	26,130	870	7,960	7,560	74,330	4,190
	1936	6,725	2,660	28,385	550	8,080	7,775	73,165	3,990
	1937	6,820	2,700	27,540	600	8,540	7,860	72,680	3,890
	1938	6,580	2,770	27,180	460	8,710	8,850	70,930	6,330
	1939	6,090	2,791	27,300	430	7,900	9,450	68,700	6,400

Game Animals

	Year	Antelope	Bear: Black or Brown	Bear: Silver Tip or Grizzly	Deer	Elk	Mtn Sheep	Peccary or Javelina	Squirrel	Turkey
Arizona	1935	5410	775	6	80,170	4810	190	5,200	50,550	9,490
	1936	5040	820	-	81,090	4605	175	5,405	54,810	10,290
	1937	5490	840	-	73,980	4400	200	5,810	57,900	10,620
	1938	5320	865	1	70,020	4140	210	6,140	43,590	9,990
	1939	5100	860	1	67,780	4290	220	7,100	25,400	8,990
New Mexico	1935	1080	1320	19	90,520	900	105	-	37,850	14,790
	1936	1040	1350	5	86,460	855	115	-	40,450	14,400
	1937	1180	1320	4	76,400	880	55	400	38,400	12,500
	1938	1460	1330	3	72,200	965	90	300	38,800	13,120
	1939	1550	1324	2	69,130	1040	70	400	36,500	12,350
Total Region 3	1935	6490	2095	25	170,690	5710	295	5,200	88,400	24,280
	1936	6080	2170	5	167,550	5460	290	5,405	95,260	24,690
	1937	6670	2160	4	150,380	5280	255	6,210	96,300	23,120
	1938	6780	2195	4	142,220	5105	300	6,440	82,390	23,110
	1939	6650	2184	3	136,910	5330	290	7,500	61,900	21,340

Predatory Animals

	Year	Wild Cat or Lynx	Coyotes	Lions	Wolf	Wild Dogs
Arizona	1935	13,370	20,140	530	30	
	1936	12,860	20,850	513	10	
	1937	12,340	20,560	490	12	
	1938	11,560	21,530	500	25	25
	1939	10,090	17,875	460	22	13
New Mexico	1935	6,230	11,430	430	45	
	1936	6,345	11,325	420	24	12
	1937	6,680	12,040	375	16	6
	1938	6,690	12,040	375	30	20
	1939	7,980	14,050	442	22	38

Game Animals Killed By Man

	Year	Antelope	Bear Black or Brown	Deer	Elk	Peccary or Javelina	Squirrel	Turkey
Arizona	1935	55	75	2870	144	5	280	915
	1936	20	85	3330	100	25	455	755
	1937	--	107	3195	66	10	455	660
	1938	--	44	3045	81		215	600
	1939	6	74	2750	82		260	512
New Mexico	1935	5	95	2080	9		1130	1075
	1936	50	75	2005	15		1840	830
	1937	--	94	2315	11		3840	832
	1938	70	96	2545	10		2720	945
	1939	46	96	3042	19		2200	646
Total Region 3	1935	60	170	4950	153	5	1410	1990
	1936	70	160	5335	115	25	3295	1585
	1937	--	201	5110	77	35	4295	1492
	1938	70	145	5510	91		2935	1545
	1939	52	170	5792	101		2460	1158

Game Animals Killed By Predatory Animals

	Year	Antelope	Deer	Elk	Peccary or Javelina	Mountain Sheep	Squirrel	Turkey
Arizona	1935	330	13,440	15	165	10	6710	2895
	1936	245	11,430	50	290	10	10290	2730
	1937	310	10,060	25	795	10	10100	2575
	1938	275	11,135	40	-	10	2690	1640
	1939	280	11,065	100	-	21	3900	2000
New Mexico	1935	125	11,010	15			3540	3130
	1936	125	10,730	15		15	5900	2905
	1937	120	7,155	15	10	5	3685	3250
	1938	145	6,945	20	-	10	4300	3120
	1939	175	6,590	17		10	4200	3200
Total Region 3	1935	455	24,450	30	165	10	10250	6025
	1936	370	22,160	65	290	25	16190	5635
	1937	430	17,215	40	805	15	13845	5825
	1938	420	18,080	60	-	20	6990	4760
	1939	455	17,655	117	-	31	8100	5200

Predatory Animals Killed

	Year	Wild Cat or Lynx	Coyotes	Wild Dog	Lion	Wolf	Number of Hunters
Arizona	1935	1985	3245		121	12	13,690
	1936	2395	4735		160	7	13,395
	1937	1655	4485		160	10	15,120
	1938	1400	4500		135	9	13,760
	1939	°					17,900
New Mexico	1935	675	1515		169	1	7,185
	1936	910	1595	3	105	4	7,740
	1937	1260	2005		65	17	11,266
	1938	1200	2230		95	18	11,330
	1939	°					13,850

°Data not available

RANGE FORAGE EQUIVALENTS

Average Grazing Capacities Per Cow Yearlong

Santa Rita Experimental Range - Semi-desert Mixed Grass Type

Well grassed foothill areas - density .40 - 24 surface acres
Mesa type areas - - - - - - - - density .25 - 32 surface acres

Jornada Experimental Range - Black Grama and Tobosa Types

	Density	A. per cow per yr.
1. Grasslands (more than 60%)		
a. Black grama (70%) best grass	.25	30
b. Black grama - cropseeds - 3-awn	.20	40
c. Dropseeds 3-awn - grama - tobosa	.25	45
d. Tobosa - burro grass - alkali sacaton	.35	35
2. Brush types (more than 95%)		
a. Mesquite sandhills (mesquite - chamiza - snakeweed - sand sage - yucca - weeds)	.15	135
b. Blackbrush - creosote bush - mixed grasses	.10	150
3. Foothills and mountains.		
a. Lower foothills (grama grasses and mixed brush)	.20	80
b. Pinon - juniper - mountain mahogany - mixed brush and grasses	.25	70

Rodent Equivalents

One thousand to twelve hundred kangaroo rats consume and waste sufficient forage to carry one cow yearlong.

Fifty jack rabbits consume and waste sufficient forage to carry one cow yearlong.

Area Available for Livestock

	Arizona	New Mexico	Total
Total land area	72,838,400	78,401,920	151,240,320
Barren and unaccessible	8,396,803	1,266,940	9,663,743
Other non-grazable	1,853,855	3,059,800	4,913,655
Total non-grazable	10,250,658	4,326,740	14,577,398
Total gross grazable	62,587,742	74,075,180	136,662,922
Closed to grazing	782,169	270,658	1,052,827
Total net area available for livestock - acres	61,805,573	73,804,522	135,610,095
Percent	84.9	94.1	89.5

Region 3

WILDLIFE AND RANGE MANAGEMENT

1940

GOVERNMENT OWNED RANGE IMPROVEMENTS - JUNE 30, 1939

ARIZONA

Forest	Fences & Corrals Miles	Fences & Corrals Cost	Stock Driveways and Bridges Miles	Stock Driveways and Bridges Cost	Water Development Number	Water Development Cost	*Other Cost	Total
Apache	460	$ 142,900		$ 378	29	$ 4,025	$ 3,096	$ 150,399
Coconino	841	222,837			205	75,659	23,434	321,930
Coronado	1,042	296,393			359	172,319	3,131	471,843
Crook	676	285,086			267	87,712	37,846	410,644
Kaibab	558	167,048	5	982	172	128,942	11,882	308,854
Prescott	723	233,500	8	1,121	199	179,443	5,429	419,493
Sitgreaves	366	81,675			53	26,728		108,403
Tonto	825	210,252	95	5,236	213	52,166	17,688	285,342
Total	5,491	$1,639,691	108	$7,717	1,497	$726,994	$102,506	$2,476,908

These figures cover the Forests but the Southwestern Forest and Range Experiment Station has a total of: 106 miles of fences, costing $35,771; 30 water developments, costing $30,784; other $2,232.

* Includes canyon bottom fencing, Revegetation, Poisonous plant eradication, Prairie-dog extermination, Cattle guards, Range plots, Deer Traps, etc.

Region 3 — GOVERNMENT OWNED RANGE IMPROVEMENTS - JUNE 30, 1939 — 1940

NEW MEXICO

Forest	Fences & Corrals Miles	Fences & Corrals Cost	Stock Driveways and Bridges Miles	Stock Driveways and Bridges Cost	Water Development Number	Water Development Cost	*Other Cost	Total
Apache	459	$ 142,590			28	$ 3,886	$ 3,096	$ 149,572
Carson	364	121,075			72	19,364	19,522	159,961
Cibola	840	276,657			81	43,648	2,770	323,075
Coronado	116	32,998			40	19,185	349	52,532
Gila	980	345,259			100	63,872	7,518	416,649
Lincoln	761	326,276			90	55,814	934	383,024
Santa Fe	498	135,431	23	$ 498	24	5,010	10,068	151,007
Total	4,018	$1,380,286	23	$ 498	435	$210,779	$44,257	$1,635,820
Total R-3	9,509	$3,019,977	131	$8,215	1932	$937,773	$146,763	$4,112,728

These figures cover the Forests but the Southwestern Forest and Range Experiment Station has the following improvements and investments in New Mexico: 105 miles of fences, costing $35,434; 30 water developments, costing $30,784; other $2,232.

* Includes canyon bottom fencing, revegetation, poisonous plant eradication, prairie-dog extermination, cattle guards, range plots, deer traps, etc.

Region 3 1940

LAND DISTRIBUTION STATISTICS

Distribution of Lands in Arizona	Area Acres	% To Total Area of State	% To Total Area of Region 3
Federal			
Indian Reservations	22,237,608	30.53	14.70
Grazing Districts and Public Domain	13,073,058	17.95	8.63
National Parks and National Monuments	1,100,753	1.51	.73
Santa Rita Experimental Range	52,399	.07	.03
Military Reservations °	67,737	.09	.04
National Forests (net) °°	11,400,598	15.65	7.57
Other-Miscellaneous-Including power withdrawals, etc.	3,457,544	4.75	2.28
Total Federally Owned or Managed	51,389,697	70.55	33.98
State			
Total State Owned	8,356,497	11.47	5.53
Private			
Private in farms and ranches	10,513,627	14.43	6.95
Private - other	2,578,579	3.55	1.70
Total Privately Owned	13,092,206		
Total Area of State	72,838,400	100.00	48.16
Distribution of Lands in New Mexico			
Federal			
Indian Reservations	5,085,460	6.49	3.37
Grazing Districts and Public Domain	11,648,879	14.86	7.70
National Parks and National Monuments	179,286	.23	.12
Jornada Experimental Range	193,522	.24	.12
National Forests (net) °°	8,558,620	10.92	5.66
Other-Miscellaneous-Including power withdrawals, etc.	1,578,917	2.01	1.04
Total Federally Owned or Managed	27,244,684	34.75	18.01
State			
Total State Owned	12,697,651	16.20	8.40
Private			
Private in farms and ranches	30,858,034	39.36	20.41
Private - other	7,601,551	9.69	5.02
Total Privately Owned	38,459,585		
Total Area of State	78,401,920	100.00	51.84
Total Area of Region 3	151,240,320		

°Exclusive of area now within the forest
°° Latest available figures

The net forest area in Arizona and New Mexico totals:	19,959,145	Acres
The gross forest area in Arizona	12,105,614	"
The gross forest area in New Mexico	9,885,187	"
Total	21,990,801	

RECREATION AND LANDS

Recreation Visitors - Calendar Year 1939

	Visitors	To Enjoy Scenery	Transients
Arizona	333,603	126,850	2,504,850
New Mexico	308,446	81,715	1,483,992
Region 3 total	642,049	208,565	3,988,842

Grand Total 4,839,456

Special Uses - Fiscal Year 1939

In Force 6/30/39

	Free	Charge	Total
Arizona	3,865	1,431	5,296
New Mexico	1,733	791	2,524
Region 3	5,598	2,222	7,820

Land Exchange

Total Number Consummated Cases To June 30, 1939, Inc.

Offered Lands - Total Consummated		Area Accepted	Estimated Value
Arizona	45	202,658	$ 433,148
New Mexico	50	157,435	517,405
Total	95	360,093	950,553

Selected Lands - Total Consummated

State	Area	Land Value	Timber M. Ft. B. M.	Timber Value
Arizona	18,116	38,030	140,631	341,485
New Mexico	8,561	15,226	182,868	419,091
Region Total	26,677	53,256	323,499	760,576

NATIONAL FOREST AREAS

Fiscal Year 1939

Arizona	Net Area	New Mexico	Net Area
Apache	679,432	Apache	889,657
Coconino	1,730,033	Carson	1,128,860
Coronado	1,317,659	Cibola	1,641,829
Crook	1,422,777	Coronado	124,988
Kaibab	1,772,859	Gila	2,393,732
Prescott	1,265,539	Lincoln	1,145,878
Sitgreaves	801,735	Santa Fe	1,233,676
Tonto	2,410,564		
Total - Arizona	11,400,598	Total - N. M.	8,558,620

Net Area of the 158 National Forests in the U. S. 173,222,953 acres.

RECREATION AND LANDS

IMPROVED PUBLIC RECREATION AREAS ON NATIONAL FORESTS IN REGION 3
(Picnic Grounds - Forest Camps - Winter Sports Areas - Vista Points)

Apache (21)

Elderberry Spring Picnic Ground
Greer Forest Camp
East Fork Forest Camp
Sheep Crossing Forest Camp
Alpine Divide Picnic Ground
Diamond Rock Forest Camp
Aspen Forest Camp
Hall Forest Camp
Beaver Dam Forest Camp
Warren Forest Camp
Colonel Spring Forest Camp
West Fork Forest Camp
P. S. Point Forest Camp
Buffalo Crossing Forest Camp
K. P. Cienega Forest Camp
Hannagan Forest Camp
Upper Blue Forest Camp
Blue Crossing Forest Camp
Middle Blue Forest Camp
Grant Creek Forest Camp
Lower Blue Forest Camp

Coconino (13)

Townsend Forest Camp
Sheep Hill Ski Run
Hart Prairie Winter Sports Area
Kit Carson Forest Camp
Lake Mary Picnic & Forest Camp
Pine Tree Flat Picnic & Forest Camp
Slide Rock Forest Camp
Banjo Bill Forest Camp
Manzanita Forest Camp
Dairy Springs Forest Camp
Double Springs Forest Camp
Tombler Forest Camp
Kehl Spring Picnic Ground & Forest Camp

Coronado (24)

Rustler Park Picnic Ground, Forest Camp, Winter Sports Area
Herb Martyr Forest Camp
Camp Stewart Forest Camp
South Fork Forest Camp
Idlewild Picnic Ground
Pinery Canyon Forest Camp & Picnic Ground
West Turkey Picnic Ground & Forest Camp
Turkey Creek Picnic Ground & Forest Camp

Coronado (Cont'd.)

Upper Rucker Forest Camp
Hermitage Forest Camp
Bathtub Forest Camp
Clanton Canyon Picnic Ground
Cochise Stronghold Picnic Ground
Morse Canyon Picnic Ground
Marshall Gulch Picnic & Forest Camp
Upper Sabine Picnic & Forest Camp
Soldier Camp Forest Camp & Picnic Ground
Bear Wallow Forest Camp
Sabino Canyon Picnic Grounds
Madera Canyon Picnic Ground
Big Rock Picnic Ground
Roundup Picnic Ground
Pena Blanca Picnic & Forest Camp
Calabasas Picnic Ground

ARIZONA (Cont'd)

Crook (19)

Oak Flat Picnic Ground & Forest Camp
Pinal Mountain Picnic Ground & Forest Camp
Pioneer Pass Picnic Ground & Forest Camp
Jones Water Forest Camp & Picnic Ground
Soldier Creek Forest Camp & Picnic Ground
Hospital Flat Forest Camp & Picnic Ground
Shannon Picnic Ground & Forest Camp
Turkey Flat Picnic Ground & Forest Camp
Arcadia Forest Camp
Noon Creek Picnic Ground
Wet Canyon Picnic Ground
Marijilda Picnic Ground
Stockton Pass Picnic Ground
Honeymoon Picnic Ground & Forest Camp
Engineer Spring Forest Camp
Stray Horse Forest Camp
Upper Juan Miller Picnic Ground
Lower Juan Miller Forest Camp
Granville Picnic Ground & Forest Camp

Kaibab (10)

Jacob Lake Forest Camp
V. T. Ranch Forest Camp
Parks Forest Camp
Spitz Spring Picnic Ground
Garland Prairie Vista Picnic Ground
Williams West Forest Camp
Lava Cave Picnic Ground
Whitehorse Lake Picnic Ground & Forest Camp
J. D. Dam Picnic Ground & Forest Camp
Sycamore Rim Picnic Ground

Prescott (9)

Indian Creek Picnic Ground & Forest Camp
Wolf Creek Forest Camp
Granite Basin Picnic Ground & Forest Camp
Mingus Mountain Picnic Grounds & Forest Camp
Powell Spring Picnic Ground & Forest Camp
Horsethief Basin Picnic Ground
Horsethief Basin Forest Camp
Kentuck Spring Forest Camp
Thumb Butte Picnic Ground

Sitgreaves (2)

Pinetop Forest Camp
Lakeside Forest Camp

Tonto (14)

Pine Forest Camp
Verde Bridge Forest Camp
Tonto Creek Forest Camp
Cave Creek Picnic Ground
Ashdale Picnic Ground
Broncho Canyon Forest Camp
Camp Creek Picnic Ground
Coon Bluff Picnic Ground
Blue Point Picnic Ground
Blue Point Forest Camp
Canyon Lake Forest Camp & Picnic Ground
Crabtree Wash Forest Camp & Picnic Ground
Rose Creek Forest Camp
Reynolds Creek Forest Camp

TOTAL FOR ARIZONA: 112

RECREATION AND LANDS

IMPROVED PUBLIC RECREATION AREAS ON NATIONAL FORESTS IN REGION 3

(Picnic Grounds - Forest Camps - Winter Sports Areas - Vista Points)

Carson (22)

Cabresto Lake Forest Camp
Eagle Rock Picnic Ground
Goat Hill Forest Camp
Columbine Forest Camp
La Bonita Forest Camp
Elephant Rock Forest Camp
June Bug Forest Camp
Hondo Canyon, Forest Camp & Picnic Grounds
Viniteria Picnic Ground
Capulin Picnic Ground & Forest Camp
The Cave Picnic Ground
L Sombra Forest Camp
Comales Picnic Ground
Agua Piedra Forest Camp
Agua Piedra Winter Sports Area
La Junta Forest Camps & Picnic Grounds
Angostura Forest Camp
Santa Barbara Forest Camp
Lagunitas Lake Forest Camp
La Jara Forest Camp & Picnic Ground
El Rito Creek Forest Camp & Picnic Ground
Canjilon Creek Forest Camp

Cibola (34)

Juan Tabo Picnic Ground
La Cueva Picnic Ground
Las Hertas Creek Picnic Grounds
Capulin Picnic Ground
Sandia Crest Picnic Ground
Kiwanis Point Picnic Ground
Balsam Glade Picnic Ground
Lagunita Picnic Ground
Madera Winter Sports Area
Tree Spring Winter Sports Area
Tree Spring Picnic Ground
Doc Long Picnic Ground
Sulphur Canyon Picnic Ground
Cienega Canyon Picnic Ground
Cole Spring Picnic Ground
Cedro Peak Vista & Picnic Ground
Lobo Picnic Ground
Aspen Spring Picnic Ground
Turkey Spring Picnic Ground
McGaffey Picnic Ground, Forest Camp & Winter Sports Area
White Water Picnic Grounds
Water Canyon Picnic Ground & Forest Camp
East Bear Trap Forest Camp
Bear Trap Forest Camp
Hughes Mill Forest Camp
Springtime Picnic Ground & Forest Camp
Luna Park Picnic Ground & Forest Camp
4th of July Spring Picnic Ground
Tajique Picnic Ground & Forest Camp
Capillo Peak Vista, & Picnic Ground
New Canyon Picnic Ground & Forest Camp
Canyon Colorado Picnic Ground & Forest Camp
Mountainair Ranger Station Picnic Ground
Trigo Canyon Picnic Ground

Jornada Experimental Range

Rope Springs Picnic Ground

New Mexico (Cont'd.)

Gila (19)

Gilita Forest Camp & Picnic Ground
Lower Willow Forest Camp
Upper Willow Forest Camp
Bursum Forest Camp
Upper Whitewater Forest Camp
Whitewater Forest Camp & Picnic Ground
Big Dry Forest Camp & Picnic Ground
Little Dry Forest Camp & Picnic Ground
Upper Black Canyon Forest Camp
Lower Black Canyon Forest Camp
Rocky Canyon Forest Camp
Goforth Forest Camp
Lower Sabillo Forest Camp & Picnic Ground
Pine Flat Picnic Ground
McMillen Picnic Ground & Forest Camp
Cherry Creek Picnic Ground & Forest Camp
Walnut Creek Picnic Ground
Iron Creek Picnic Ground & Forest Camp
Wrights Cabin Picnic Ground & Forest Camp.

TOTAL FOR NEW MEXICO: 105

Lincoln (13)

Red Cloud Picnic Ground
Pine Lodge Picnic Ground & Forest Camp
Philadelphia Forest Camp
South Fork Forest Camp
Cedar Creek Picnic Ground
Ruidoso Forest Camp
Ruidoso Winter Sports Area
Schoolhouse Winter Sports Area & Picnic Ground
Cherokee Bill Winter Sports Area
Karr Canyon Picnic Ground & Forest Camp
James Canyon Picnic Ground & Forest Camp
Sitting Bull Falls Picnic Ground
Dark Canyon Picnic Ground

Santa Fe (16)

Camp Long Picnic Ground & Forest Camp
Gallinas Picnic Grounds & Forest Camps
Panchuela Forest Camp
Winsor Creek Forest Camps & Picnic Grounds
Holy Ghost Forest Camp & Picnic Grounds
Dalton Bridge Picnic Ground & Forest Camp
Field Tract Forest Camp
Little Tesuque Picnic Ground & Winter Sports Area
Upper Las Vacas Forest Camp & Picnic Ground

Santa Fe (Cont'd.)

La Cueva Forest Camp & Picnic Ground
Battleship Rock Forest Camp & Picnic Ground
East Fork Forest Camp & Picnic Groun
Jemez Falls Forest Camp & Picnic Ground
Los Conchas Forest Camp & Picnic Ground
Paliza Picnic Ground & Forest Camp
Calaveras Forest Camp & Picnic Ground

WILDERNESS AREAS

Arizona

Forest	Name of Area	Acreage: National Forest	Acreage: Other	Logging	Grazing	Final Approval
Apache (Crook)	Blue Range	216,737	1,427	Deferred	To Capacity	8-20-36
Tonto	Mazatzal	213,760	410	Limited	Conservative	5-27-38
Tonto (Crook)	Superstition	131,754	66	Limited	Conservative	2-18-39

New Mexico

Gila	Black Range	168,424	1,560	Discouraged	Conservative	8-20-36
Gila	Gila	566,474	5,730	Inaccessible	Continued	4-4-38
Santa Fe	Pecos Division	136,640	1,360	Discouraged	To continue	8-22-36

WILD AREAS

Arizona

Apache	Mt. Baldy	7,400	-	Inaccessible	Continued	8-20-36
Coconino, Kaibab and Prescott	Sycamore Canyon	46,122	1,108	None	Continued	8-20-36
Coronado	Chiricahua	17,280	-	Discouraged	Conservative	8-20-36
Crook	Caliuro	50,200	-	Discouraged	Reserve Range	5-26-36
Prescott (Tonto)	Pine Mountain	17,424	76	None	To decrease	8-22-36
Tonto	Sierra Ancha	33,934	66	Discouraged	Conservative	2-28-33

WILD AREAS

New Mexico

Forest	Name of Area	Acreage: National Forest	Acreage: Other	Logging	Grazing	Final Approval
Lincoln	White Mountain	22,800	1,200	Discouraged	Conservative	8-30-36
Santa Fe	San Pedro Parks	45,000	-	Not contemplated	Continued	8-22-36

EXPERIMENTAL FORESTS

Arizona

Coconino, Kaibab	Fort Valley	4,020	-	Limited	None	1-28-36
Coconino	Long Valley	2,536	15	Limited	Capacity	3-31-36
Crook	Mt. Graham	3,040	-	Limited	Continued	3-23-32
Tonto	Sierra Ancha	13,255	-	None	Continued	4-6-38

New Mexico

Lincoln	Cloudcroft	2,120	-	Limited	None	11-30-35

NATURAL AREAS

Arizona

Coconino	Oak Creek Canyon	940	-	None	None	10-15-31
Coconino	San Francisco Pks	880	-	None	Conservative	10-15-31
Coronado	Butterfly Peak	1,000	-	None	Conservative	7-25-35
Coronado	Chimnea Canyon	160	-	None	Conservative	2-26-31
Coronado	Pole Bridge Canyon	320	-	None	Continued	2-26-31

New Mexico

Santa Fe	Monument Canyon	640	-	None	None	10-1-32

RESEARCH AREA

New Mexico

Santa Fe	Univ. of New Mex.	10,000	-	Regular		5-29-30

°Parker Creek Area Closed.

ROADS AND TRAILS

To End of Fiscal Year, June 30, 1939

During Fiscal Year 1939 — ARIZONA	Construction		Maintenance		
Type of Road	Miles	Cost	Miles	Cost	TOTAL
Forest Highways	0	$ 469,708	55	$ 10,441	480,149
Forest Development Roads	118	586,487	4,250	110,314	696,801
Trails	565	31,638	3,046	27,792	59,430
TOTAL		1,087,833		148,547	1,236,380
To June 30, 1939					
Forest Highways	622	9,152,608		358,016	9,510,624
Forest Development Roads	3,341	8,848,574		1,175,036	10,023,610
Trails	3,006	471,618		262,294	733,912
TOTAL		18,472,800		1,795,346	20,268,146
During Fiscal Year 1939 — NEW MEXICO					
Forest Highways	1	371,220	75	37,668	408,888
Forest Development Roads	69	552,847	2,569	137,736	690,583
Trails	97	10,160	3,279	18,447	28,607
TOTAL		934,227		193,851	1,128,078
To June 30, 1939					
Forest Highways	320	6,269,311		453,154	6,722,465
Forest Development Roads	2,284	6,180,315		1,306,426	7,486,741
Trails	1,927	241,072		203,303	444,375
TOTAL		12,690,698		1,962,883	14,653,581
During Fiscal Year 1939 — REGION					
Forest Highways	1	840,928	130	48,109	889,037
Forest Development Roads	187	1,139,334	6,819	248,053	1,387,384
Trails	662	41,798	6,325	46,239	88,037
TOTAL		2,022,060		342,401	2,364,458
To June 30, 1939					
Forest Highways	942	15,421,919		811,170	16,233,089
Forest Development Roads	5,625	15,028,889		2,481,462	17,510,351
Trails	4,933	712,690		465,597	1,178,287
TOTAL		31,163,498		3,758,229	34,921,727

NET RECEIPTS FOR THE FISCAL YEAR, 1939

State	Sales	TIMBER: Forest Products	TIMBER: Settlement	TIMBER: Trespass	GRAZING: Horses Cattle Swine	GRAZING: Sheep and Goats	GRAZING: Trespass
Arizona	$110,812.25	339.97		38.90	133,375.75	23,457.32	2,217.21
New Mexico	53,903.31	1017.13		0.00	72,760.68	23,290.49	824.48
Region 3	$164,715.56	1357.10		38.90	206,136.43	46,747.81	3,041.69

State	Special Use	Water Power	Fire Trespass	Property Trespass	Total
Arizona	17,442.36	6,828.43			$ 294,512.19
New Mexico	8,674.23	0.00			160,470.32
Region 3	26,116.59	6,828.43			454,932.51

Due School Fund (Enabling Act June 20, 1910)

Arizona	23,076.79
New Mexico	478.20

	Arizona	New Mexico
Net amounts on which 25% and 10% are computed	271,435.40	159,992.12
Due States: 25%	67,858.84	39,998.04
Due Road and Trail Fund: 10%	27,143.54	15,999.22
TOTAL	$ 95,002.38	55,997.26

Value of timber delivered in exchange for land under the Act of March 20, 1922, less value previously delivered in cases rejected during year:
$30,964.96

N.B. Horses, cattle, and swine were adjusted between States in the amount of 47¢, Arizona increased and New Mexico decreased.

STATE OF ARIZONA
NATIONAL FOREST AREAS BY COUNTIES
("Net" or Actual National Forest Lands)
June 30, 1939

Forest	County	Net Forest Area-Acres	Amount Paid Under Act June 20, 1910	Amount Paid Under Act May 23, 1908
Apache	Apache	442,621		$ 2,498.33
	Greenlee	236,811		1,336.70
	Total	679,432	$ 1,304.18	3,835.03
Coconino	Coconino	1,303,615		10,085.56
	Yavapai	426,418		3,299.39
	Total	1,730,033	4,551.83	13,384.95
Coronado	Cochise	482,183		3,192.20
	Pima	385,445		2,551.15
	Pinal	24,694		163.10
	Santa Cruz	425,337		2,815.41
	Total	1,317,659	2,966.05	8,721.86
Crook	Cochise	22,400		92.25
	Gila	340,461		1,406.09
	Graham	397,275		1,640.53
	Greenlee	512,118		2,115.31
	Maricopa	10,866		44.66
	Pinal	139,657		577.01
	Total	1,422,777	1,998.20	5,875.85
Kaibab	Coconino	1,728,567		13,198.37
	Mohave	28,059		213.88
	Yavapai	16,233		124.54
	Total	1,772,859	4,603.46	13,536.79
Prescott	Coconino	43,332		199.90
	Yavapai	1,222,207		5,645.22
	Total	1,265,539	1,987.75	5,845.12
Sitgreaves	Apache	43,411		420.41
	Coconino	287,325		2,785.13
	Navajo	470,999		4,565.48
	Total	801,735	2,642.70	7,771.02
Tonto	Gila	1,335,650		4,924.96
	Maricopa	630,935		2,510.92
	Pinal	59,028		216.87
	Yavapai	334,951		1,235.47
	Total	2,410,564	3,022.62	8,888.22
Total for Arizona		11,400,598	$ 23,076.79	$ 67,858.84

Distribution by Counties of the 25% Fund (Last Column)

Apache	$ 2,918.74	Greenlee	$ 3,452.01	Pinal	$ 956.98
Cochise	3,284.45	Maricopa	2,555.58	Santa Cruz	2,815.41
Coconino	26,268.96	Mohave	213.88	Yavapai	10,304.62
Gila	6,331.05	Navajo	4,565.48	Total	67,858.84
Graham	1,640.53	Pima	2,551.15		

STATE OF NEW MEXICO
NATIONAL FOREST AREAS BY COUNTIES
("Net" or Actual National Forest Lands)
June 30, 1939

Forest	County	Net Forest Area-Acres	Amount Paid Under Act June 20, 1910	Amount Paid Under Act May 23, 1908
Apache	Catron	889,657	$ 64.95	$ 5,432.34
Carson	Colfax	6,293		27.35
	Mora	2,496		10.74
	Rio Arriba	776,059		3,357.74
	Taos	344,012		1,488.15
	Total	1,128,860	58.39	4,883.98
Cibola	Bernalillo	81,100		322.83
	Catron	203,511		810.35
	McKinley	113,061		448.96
	Sandoval	37,940		150.96
	Sierra	20,766		82.34
	Socorro	926,700		3,689.72
	Torrance	169,845		675.73
	Valencia	88,906		354.20
	Total	1,641,829	78.13	6,535.09
Coronado	Hidalgo	124,988	11.19	936.23
Gila	Catron	1,141,505		3,800.94
	Grant	885,038		2,946.55
	Hidalgo	7,653		25.50
	Sierra	359,536		1,197.11
	Total	2,393,732	95.29	7,970.10
Lincoln	Chavez	40,458		293.21
	Eddy	134,739		976.81
	Lincoln	440,780		3,195.40
	Otero	437,437		3,170.48
	Socorro	1,866		13.29
	Torrance	90,598		657.02
	Total	1,145,878	99.31	8,306.21
Santa Fe	Mora	82,428		396.40
	Rio Arriba	412,352		1,983.17
	Sandoval	274,396		1,319.74
	San Miguel	282,964		1,361.28
	Santa Fe	179,615		864.00
	Taos	1,921		9.50
	Total	1,233,676	70.94	5,934.09
Total for New Mexico		8,558,620	$478.20	$ 39,998.04

Distribution by Counties of the 25% Fund (Last Column)

Bernalillo	$ 322.83	Lincoln	$ 3,195.40	Santa Fe	$ 864.00
Catron	10,043.63	McKinley	448.96	Sierra	1,279.45
Chavez	293.21	Mora	407.14	Socorro	3,703.01
Colfax	27.35	Otero	3,170.48	Taos	1,497.65
Eddy	976.81	Rio Arriba	5,340.91	Torrance	1,332.75
Grant	2,946.55	Sandoval	1,470.70	Valencia	354.20
Hidalgo	961.73	San Miguel	1,361.28	Total	$39,998.04

LIST OF FORESTRY SCHOOLS IN THE UNITED STATES
With Courses Leading To A Degree In Forestry
Approved by Society of American Foresters

University of California, Berkeley, Calif.
Colorado State College, Fort Collins, Colo.
Connecticut State College, Storrs, Conn.
University of Georgia, Athens, Ga.
Harvard University (Harvard Forest) Petersham, Mass.
University of Idaho, Moscow, Ida.
Iowa State College of Agriculture, Ames, Iowa.
Louisiana State University, Baton Rouge, La.
University of Maine, Orono, Maine.
Michigan State College, East Lansing, Mich.
University of Michigan, Ann Arbor, Mich.
University of Minnesota, St. Paul, Minn.
University of Montana, Missoula, Mont.
University of New Hampshire, Durham, N. H.
New York State College of Forestry, Syracuse University, Syracuse, N. Y.
North Carolina State College of Agriculture and Engineering, Raleigh, N. C.
Ohio State University, Columbus, Ohio.
Oregon State College, Corvallis, Oregon.
Pennsylvania State Forest School, State College, Penn.
Purdue University, Lafayette, Ind.
Utah State Agricultural College, Logan, Utah.
State College of Washington, Pullman, Wash.
University of Washington, Seattle, Wash.
Yale University, New Haven, Conn.

HISTORY OF FORESTRY DEVELOPMENT IN THE UNITED STATES

1631 First sawmill at Berwick, Maine
1640 First ordinance governing timber use. (Exeter, N.H.)

1822 Dewitt Clinton, Governor of New York, pleaded for practice of conservation.
1828 Live oak and cedar reservations for Navy made in Louisiana. (19,000 acres)
1831 Timber cutting on public lands prohibited.
1849 Report of Patent Office urges conservation.
1867 Wisconsin appointed committee to report on effect of forest destruction.
1870 Census. Forest area canvassed.
1872 Governor Morton of Nebraska established Arbor Day.
1873 Forestry Committee of American Association for the Advancement of Science presented memorials to Congress, asking for the appointment of a commission of forestry.
Timber culture act.
1876 Congress established an "agency" on forestry in the Department of Agriculture. Dr. Franklin B. Hough appointed Commissioner of Forestry.
1877 Congress granted its first appropriation of $6,000 for the purpose of obtaining information preparatory to establishing a Division of Forestry.
1882 American Forestry Association started April 25 at Cincinnati.
1884 The duty of making experiments with timber was added to work of Division of Forestry.
1886 Division of Forestry in Department of Agriculture created.
1891 By Act of Congress, the President was given power to establish forest reservations.
President Harrison established the Yellowstone Park Timber Land Reserve to be under control of the Land Office.
1892 Pecos River Forest Reserve established in New Mexico.
1893 Grand Canyon Forest Reserve established in Arizona.
1896 Secretary of Interior requested the National Academy of Science to investigate and recommend a National Forest policy.
1897 By the Act of June 4, the forest reserves were put under administration and from this Act, with subsequent amendments, the forests are now being administered. The Land Office had charge of administration. The Division of Forestry gave technical advice. The U. S. Geological Survey was charged with surveying and mapping the forests.
1898 The Division of Forestry employed a total of six clerks and five scientific employees.
The first field work was done, which consisted of special investigation in connection with lumbering.

(Continued on next page)

1901 The Division of Forestry was raised to the rank of Bureau but the change was in name only.

1905 By the Act of February 1, forestry work was consolidated and the forest reserves were transferred to the Department of Agriculture and the work of the Service as we know it today, started.

In July 1905, the Bureau of Forestry became the Forest Service

1907 The "forest reserves" were changed to National Forests in name to correct the impression that they were withdrawn from use.

1908 The direct administration of field work was transferred from Washington, D. C., to six district headquarters in the West; in 1914 a seventh district was established for the Appalachian region; in 1921 an eighth district was established in Alaska, and in 1929, a ninth district was set up for the Lake States.

1909 Between 1901 and 1909, President Roosevelt set aside over 148,000,000 acres of National Forests; there are now, as of June 30, 1938, 227,280,025 (gross) acres of National Forest land.

1911 By Act of March 1 (Weeks Law), acquisition of forest lands on headwaters of navigable streams east of Mississippi River made possible.

1922 General Forest Exchange Act authorizing exchange of lands in National Forests, cutting of timber in exchange for land, reservation of timber, etc., amended and extended 1923, 1926, 1928, 1929, 1935.

1924 The Reforestation Act (Clarke-McNary) was passed on June 7, greatly extending the scope of government cooperation in forestry.

1928 McNary-Woodruff Act was passed, authorizing appropriations of $2,000,000 for 1929 and $3,000,000 each for 1930 and 1931 for purchase of forest lands.

Forest Research Act (McNary-McSweeney) was passed, providing for a national forest research program on the part of seven governmental bureaus.

1930 Forest Service Districts became "Regions".

Secretary of Agriculture authorized to enlarge tree planting operations on National Forests.

Secretary of Agriculture authroized in cases of emergency to incur expense in search of persons lost in National Forests and in transporting persons seriously ill, injured or who may die within National Forests to nearest place where may be transferred to interested relatives or local authorities.

1935 Secretary of Agriculture authorized to cooperate with States in acquisition and administration of State Forests (Fulmer Act).

1936 Secretary of Agriculture authroized to maintain forest experiment stations throughout the United States.

1937 Secretary of Agriculture authroized to cooperate in development of farm forestry in States and Territories. (Norris-Doxey Act).